

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(original)** A phosphorus-containing polymer, comprising the reaction product of an unsaturated phosphonic acid with a chain-transfer agent, the polymer having improved biodegradability as compared to the same polymer when made in the absence of the chain-transfer agent.
2. **(original)** A polymer according to Claim 1, the polymer having a biodegradability of at least 20% per 28 days (as determined by OECD 306).
3. **(original)** A polymer according to Claim 1, in which the chain-transfer agent is benzene, toluene, ethylbenzene or chlorobenzene.
4. **(original)** A polymer according to Claim 1, in which the chain-transfer agent is methylene chloride, ethylene chloride, chloroform or carbon tetrachloride.

5. **(original)** A polymer according to Claim 1, in which the chain-transfer agent is acetone, thiophenol, n-butyl thiol or dodecyl thiol.

6. **(original)** A phosphorus-containing polymer comprising the reaction product of a chain-transfer agent having at least one P-H bond with an unsaturated carboxylic, phosphonic or sulphonic acid, the polymer having a biodegradability of at least 20% per 28 days (as determined by OECD 306).

7. **(original)** A polymer according to Claim 6, having phosphorus-containing end-caps and comprising the reaction product of a chain-transfer agent having at least one P-H bond with an unsaturated carboxylic, phosphonic or sulphonic acid, said polymer having a biodegradability of at least 20% per 28 days (as determined by OECD 306).

8. **(previously presented)** A polymer according to Claim 6, in which the chain-transfer agent having at least one P-H bond is hypophosphorous acid or a water-soluble salt of said acid.

9. **(original)** A polymer according to Claim 8, in which the chain-transfer agent is an alkali metal salt or an ammonium salt of hypophosphorous acid.

10. **(previously presented)** A polymer according to Claim 6, in which the unsaturated carboxylic acid is acrylic acid or a water-soluble salt of said acid.

11. **(previously presented)** A polymer according to Claim 6, in which the unsaturated carboxylic acid is methacrylic acid, maleic acid, fumaric acid, itaconic acid, aconitic acid, citraconic acid, mesaconic acid, crotonic acid, isocrotonic acid, angelic acid, tiglic acid or a water-soluble salt of any of said acids.

12. **(previously presented)** A polymer according to Claim 1, in which the unsaturated phosphonic acid is vinylphosphonic acid (VPA), vinylidene-1,1-diphosphonic acid (VDPA) or a water-soluble salt of either of said acids.

13. (previously presented) A polymer according to Claim 6, in which the unsaturated sulphonic acid is vinylsulphonic acid (VSA) or a water-soluble salt of said acid.

14. (previously presented) A polymer according to Claim 1, comprising a telomer which is the reaction product of an adduct of vinylphosphonic acid and hypophosphorous acid (hereinafter referred to as a PPE-endcapper) with acrylic acid.

15. (original) A polymer according to Claim 14, in which the ratio of the PPE-endcapper to acrylic acid is in the range 1:5 to 1:20 molar.

16. (previously presented) A polymer according to Claim 15 in which the ratio of the PPE-endcapper to acrylic acid is about 1:10 molar.

17. (previously presented) A polymer according to Claim 1, in which at least 20% by weight of the polymer has a weight average molecular weight of 1000 or lower.

18. (original) A polymer according to Claim 17, in which at least 35% by weight of the polymer has a weight average molecular weight of 1000 or lower.

19. (previously presented) A method of making a polymer according to claim 1, in which the chain-transfer agent and the unsaturated acid are reacted together in the presence of a free-radical initiator.

20. (original) A method according to Claim 19, in which the free-radical initiator is an alkali metal persulphate.

21. (original) A method according to Claim 20, in which the free-radical initiator is sodium persulphate.

22. (original) A method according to Claim 19, in which the free-radical initiator is an alkali metal peracetate, hydrogen peroxide, a hydroperoxide, chlorine dioxide, an alkali metal chlorate or hypochlorite, an organometallic hydride, an azo-compound or any two or more of the foregoing.

23. (original) A method according to Claim 22, in which the free-radical initiator is 4,4'-azo-bis-cyanovaleric acid.

24. (original) A method according to Claim 19, in which the free-radical initiator comprises electrolysis, ultraviolet or other ionising radiation, ultrasound or any two or more of the foregoing.

Claim 25 (canceled).

26. (original) A phosphorus-containing polymer comprising the reaction product of a chain transfer agent with an unsaturated carboxylic, phosphonic or sulphonic acid, the polymer having improved biodegradability as compared to the same polymer when made in the absence of the chain-transfer agent.

27. (previously presented) A phosphorus-containing polymer as claimed in Claim 26 having phosphorus-containing end caps.

Claims 28-29 (canceled).

30. (previously presented) A polymer according to Claim 6 in which the unsaturated phosphonic acid is vinylphosphonic acid (VPA) vinylidene-1,1-diphosphonic acid (VDPA) or a water-soluble salt of either of said acids.

31. (currently amended) A polymer according to claim 6, comprising a telomer which is the reaction product of a PPE-endcapper with acrylic acid, wherein said PPE-endcapper is ~~a reaction product of~~ an adduct of vinylphosphonic acid and hypophosphorous acid.

32. (currently amended) A method of making a polymer according to claim 6, in which the chain-transfer agent and the unsaturated acid are ~~reached~~ reacted together in the presence of a free-radical initiator.